

MISHIN, P.A.; DROZD, S.N.

Using surface hardening in manufacturing ball pins for the MAZ motor vehicles. **Avt.prom.** 28 no.1:39-41 Ja '62. (MIRA 15:2)

1. Minskiy avtozavod.  
(Cementation (Metallurgy))

FEL'DSHTEYN, E.I., doktor tekhn. nauk; MISHIN, P.A.; SOKOLOVA, Ye.I.;  
FEYGIN, Z.E.

Sulfo-cyaniding of metal-cutting tools. Avt. prom. 29 no.4:  
37-39 Ap '63. (MIRA 16:6)

1. Minskiy avtozavod.  
(Case hardening)  
(Metal-cutting tools)

ANDRYUSHCHENKO, N.F.; LYAKH VICH, L.S.; MISHIN, P.A.; FINSHTAYN, Ya.N.

Surface hardening of the semiaxles of the rear axle of the MAZ-200  
and MAZ-205 motortrucks. Avt.prom. 22 no.10:31-33 10 1983.  
(MIRA 1:10)  
1. Minskiy avtozavod i Belorusskiy politekhnicheskii institut.

L 12860-66 EFT(m)/EWP(w)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW  
ACC NO: RP5027913

SOURCE CODE: UR/0133/65/000/011/1041/1042

AUTHOR: Lyakhovich, L. S.; Mishin, P. A.; Funshteyn, Ya. N.

ORG: none

TITLE: Strengthening of tubes and other hollow cylindrical articles by the circumferential quenching method

SOURCE: Stal', no. 11, 1965, 1041-1042

TOPIC TAGS: high strength steel, plasticity, steel microstructure

ABSTRACT: Experiments were made on thin walled tubes (87 x 2.5) of steel 20 and (73.5 x 20) of steel 15 with chemical composition (in %):

Table 1

Steel	C	Mn	Si	Cr	S	P
20	0.20	0.5	0.17	0.12	0.020	0.021
15	0.14	-	0.31	-	0.034	0.016

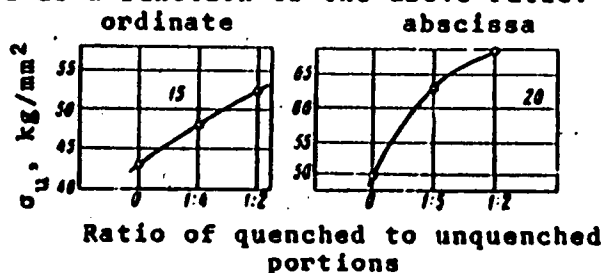
UDC: 621.785.6 : 621.9.462

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L 12860-66

ACC NR: AP5027913

Specimens of 500 mm length were heated to the hardening temperature range (960-980°C) for 4 sec by circumferential inductors having active coil widths of 20 mm. The tubes were then quenched in a water spray (cooling time--5 to 6 sec); i. e., partially quenched portions (15 mm) were alternated with unquenched portions. The ratio of quenched to unquenched lengths varied from 1:5 to 1:2 (the interlengths of the unquenched sections were respectively 75, 60, 45 and 30 mm). The strengths of these processed thin walled tubes were determined for steels 15 and 20, and plotted as a function of the above ratio.



Strength increases with a decrease in the ratio. A 1:0 ratio would approach the ultimate strength values reported in table 1. Microstruc-

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L 12860-66

ACC NR: AP5027913

tures revealed that the unquenched tube had a predominantly ferritic-pearlitic matrix and after hardening, pseudoppearlitic. As-quenched hardness ranged between 27 to 32 R<sub>C</sub> (262 to 297 VHN). The plasticity drop which occurs may be overcome by alternating hardened strips with unhardened sections. The authors' final conclusion was that an economy could be achieved with this process by means of a 20 to 30% lowering in wall thickness. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 11/      SUBM DATE: 00/      ORIG REF: 002/      OTH REF: 000

  
Card 3/3

L 63016-65 ENT(m)/ENA(d)/ENP(t)/ENP(k)/ENP(s)/ENP(b)/ENA(c) FY-4 MJW/  
JD/HW

ACCESSION NR: AP5015968

UR/0113/65/000/006/0040/0041  
629.11.011.6:539.433

AUTHORS: Lyakhovich, L. S.; Mishin, P. A. (deceased); Furshteyn, Ya. N.

TITLE: Strengthening of low-carbon steel sheets by the method of strip hardening

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1965, 40-41

TOPIC TAGS: strip hardening, strip quenching, steel sheet, steel sheet property/  
St 3 steel, 10KP low carbon steel, 20KP low carbon steel, 25 low carbon steel,  
15GS low carbon steel, 14KhGS low carbon steel, 19KhGS low carbon steel

ABSTRACT: To determine the strengthening effects of strip quenching on steel sheet, the strength, stiffness and impact strength of sheet steel specimens (213 x 213 mm) were experimentally determined for untreated specimens and specimens with 15-mm wide hardened strips (61 mm apart in both directions) which were produced by high frequency electric heating and sorbitic phase quenching. Specimens of low carbon steels St3, 10KP, 20KP, 25, 15GS, 14KhGS, 19KhGS were tested. It was found that the tensile strength increased by factors of 1.5-2 (from 38 to 68 kg/mm<sup>2</sup> for St3; 37-77 for 10KP and 20KP; 58-125 for 19KhGS) with corresponding decrease in  $\delta$  (from 30, 33, and 21% to 7, 3, and 2% respectively for St3, 10KP and 19KhGS).

L 63016-65

ACCESSION NR: AP5015968

19KhGS). The stiffness, which was measured by checking the central deflection of perimeter-supported sheets due to central loadings at 0.5-ton intervals, was found to increase by factors of 1.5-2. The impact strength was measured by repeated loads (0.67 kg) at the center of the sheets. It was found that the impact strength increased by factors of  $\approx 2$  (14 494 blows to failure for treated versus 6346 blows for untreated St3; 29 500 versus 15 650 for 15GS) for sheets 3-mm thick. It was concluded that strip strengthening of steel sheet permits thinner sheets and consequent significant material savings in industrial applications. Orig. art. has: 2 tables and 3 figures.

ASSOCIATION: Belorusskiy politekhnicheskii institut (Belorussian Polytechnical Institute); Minskiy avtozavod (Minsk Automobile Factory)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 000

OTHER: 000

Card 2/2



MISHIN, P.N.

Results obtained from incubating eggs in the fall and winter.  
Ptisevodstvo 8 no.11:13-14 N '58. (MIRA 11:11)

1. Direktor Gatchinskoy inkubatorno-ptitsevodcheskoy stantsii.  
Leningradskoy oblasti.  
(Gatchina--Incubation)

ARSENHVI, A.Yu.; BOGDANOV, M.N.; GORIZONTOVA, Ye.A.; YERSHOVA, Ye.I.;  
YELENBAUF, N.I.; LOPE, N.Sh.; KARAVAYEV, A.F.; KOLOBOV, G.M.;  
LOBIN, N.V., kand. sel'khoz. nauk; KUSHNER, Kh.F., doktor biolog.  
nauk; MISHIN, P.N.; PATRIK, I.A., kand. sel'khoz. nauk; MEDIKH,  
V.K., kand. sel'khoz. nauk; SEMTNEV, S.I., akademik; SAKOLETOV,  
A.I.; FILASOV, V.V.; SHKUDOVA, R.I.; SOKOLOVA, G.S., red.;  
ROMANOVICH, Ye.F., red.; LEVINA, L.G., tekhn. red.

[Chickens for meat] TSyplyata na miaso. Moskva, Izd-vo M-va  
sel'khoz. MSFSR, 1960. 197 p. (MIRA 15:1)  
(poultry)

ZHEREBIN, B.N.; MISHIN, P.P.; KUDOYAROV, M.S.; SUKHENKO, S.I.; RASKIN, V.Z.;  
OSTROUKHOV, M.Ya.; RAKOV, V.V.

Experimental blast furnace smelting using coke from large-capacity  
coke ovens. Koks i khim. no.2:23-29 '64. (MIRA 174)

1. Kuznetskiy metallurgicheskiy kombinat (for Raskin).
2. Chelyabinskiy institut stali (for Ostroukhov). 3. Kuznetskiy  
filial Vostochnogo uglekhimicheskogo instituta (for Rakov).

ZHEREBIN, B.N.; DEMBOVETSKIY, V.P.; KUDOTAROV, M.S.; MISHIN, P.P.

Studying blast furnace operations with the blowing of coke  
oven gas into the hearth. Stal' 25 no.4:293-298 Ap '65.  
(MIRA 18:11)

1. Kuznetskiy metallurgicheskiy kombinat i Sibirskiy  
metallurgicheskiy institut.

VOSKOBYNIKOV, V.G., Jr. S., PERKIN, J. M.;  
Tikhonov, V.A., PERKIN, J. M.,

Dynamics and control of the burning process  
of a blast furnace. (Soviet Union) 1986-08-01.

STARSHINOV, B.N.; STANISLAV, V.I.; STANISLAV, V.I.; STANISLAV, V.I.; STANISLAV, V.I.;  
 KHOMENCHUK, A.I.; Priznaniye: STANISLAV, V.I.; STANISLAV, V.I.; STANISLAV, V.I.;  
 N.I.; FLISKEVICH, S.T.; MILEYEV, Y.I.; STANISLAV, V.I.; STANISLAV, V.I.;  
 TABASOV, F.P.; TAGHIBA, A.M.; KIMENOV, V.I.; TRACHEN, V.I.;  
 FREYDIN, I.M.; LUKIN, P.G.; LOPOV, Y.A.; MISHIN, V.I.; KUCHENKOV, V.I.;  
 M.P.; BOIMATOV, V.A.; AYUKOV, A.S.; LUKIN, V.I.; YAKOVLEV, Y.I.;  
 SOLIKIY, Yu.I.; KONALINA, V.I.; STANISLAV, V.I.; STANISLAV, V.I.;  
 SAPIRONOV, P.V.; STANISLAV, V.I.; STANISLAV, V.I.; STANISLAV, V.I.;  
 BANINA, Ye.V.

Results of the first year of operation of large-scale industrial  
 furnaces. Ser. 1. NIIIM no. 11:3.-1966.

1966, 18, 1

ZHEPESIN, B.A.

MILKIN, ....

A. ....

MISHIN, P.Ya., uchitel' khimii

Simple model of the atom. Khim.v shkole 14 no.5:80 8-0  
'59. (MIRA 12:12)

1. Srednyaya shkola sela Dedurovka Orenburgskoy oblasti.  
(Atoms--Models) (Chemistry--Study and teaching.)



MISHIN, P.Ya. (Selo Dedurovka, Orenburgskaya oblast'); DUBSKIY, L.L.  
(Selo Dedurovka, Orenburgskaya oblast')

Apparatus for demonstrating the electrical conductivity of electrolyte  
solutions. Khim. v shkole 16 no.4:81-82 31-ap '61. (MIRA 14:8)  
(Electrolytes--Conductivity)

KRASULIN, N.P. (g.Pushkina - Moskva); WISHIN, S.A. (g.Pushkino - Moskva).

Scales for determining transpiration by weighing twigs. Bot.zhur.

41 no.8:1145-1150 Ag '56.

(MLRA 9:12)

(Scales (Weighing instruments)) (Plants--Transpiration)

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020 0706

AUTHORS

Rykunov, I. N. and Mishin, S. V.

TITLE

Some characteristics of the propagation of microwaves  
over continental paths

PERIODICAL

Akademika nauk SSSR Izvestiya, Seriya Geofizicheskaya,  
no. 6, 1961, 810-817

NOTE: This paper was presented at an augmented seminar of the Otdel  
seismologii i seysmicheskoy sluzhby (Division of Seismology and Seism  
sluzhby) which dealt with surface waves and was held at Simferopol  
between October 1-5, 1960. The authors studied the effect of ground  
relief and of structure of the upper crustal layers on the intensity of  
microseisms. The microseisms were produced by a cyclone on February  
1, 1958, along the north west coast of Norway. They were recorded at  
Moscow, Makhachkala, Goris (in the Caucasus region), Ashkhabad, Pulkovo,  
Simferopol, Tashkent, Tashkent, Semipalatinsk, Warsaw and Trieste stations.

S 019 61 000 006 002 011  
D207 D306

Some characteristics of the

Analysis of the records showed that the microseism intensity was reduced by the normal spreading and absorption with distance, as well as

the ground relief of Scandinavian mountains and the complex crustal structure of the Caucasus, Alps and Ural ranges. The microseism which started as horizontal Rayleigh waves were found to have Love components. These Love components are shown to be the result of a transformation of Rayleigh waves in the regions with pronounced mountainous relief and with crustal structure peculiarities. There are 6 figures, 4 tables and 16 references, 8 Soviet bloc and 8 non-Soviet bloc. The 4 most recent references to English language publications are as follows: J. C. L. de Bremaecker, Transformations and reflection of Rayleigh waves at corners, *Geophys.*, 23, no. 2, 1958; H. M. Iyer, A study of the detection of arrival of microseisms at Kew observatory, *Geophys.*, no. 1, 1958; B. Gutenberg, Microseisms, *Adv. Geophys.*, no. 5, 1958; H. Jensen, On the heat distribution in group microseisms, *Denmark, Geod. Inst. Medd.*, no. 36, 1958.

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ASSOCIATION - Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova  
Moscow State University im. M.V. Lomonosov

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December 22, 1960

ACC NR: AP6032421

SOURCE CODE: UR/0387/66/000/009/0087/0092

AUTHOR: Mishin, S. V.; Dareshkina, N. M.

ORG: Northeastern Joint Research Institute, Siberian Department, Academy of Sciences  
(Severo-vostochny, kompleksnyy nauchno-issledovatel'sky institut, Sibirskoe otdeleniye,  
Akademii nauk)

TITLE: Identification of exchanged components from seismograms of distant earthquakes

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 9, 1966, 87-92

TOPIC TAGS: seismic wave, seismography, earth crust, longitudinal wave, transverse  
wave, stratigraphy

ABSTRACT: The identification of exchanged waves on the basis of amplitude to time ratios of the wave components is discussed. The factoring, proposed in this paper, eliminates the background of longitudinal waves, thus widening the range of utilization of the earthquake seismograms for the study of the lower earth crust. Because of the low velocities of those waves, the seismograms have to be enlarged and redrawn. This adds to the errors in interpretation. The resolution is limited by the periods of the recorded oscillations and it is still necessary to identify the entry of each wave into a new stratum. To identify the stratigraphic boundaries, the average velocities

UDC: 550.342

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ACC NR: AP6032421

of the longitudinal and transverse waves should be known, i. e., determined by some other method. Orig. art. has: 3 figures, 2 tables, 1 formula.

SUB CODE: 08/ SUBM DATE: 17Jun65/ ORIG REF: 011

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"APPROVED FOR RELEASE: 06/14/2000

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APPROVED FOR RELEASE: 06/14/2000

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ACC NR: AP6027576

SOURCE CODE: UR/0018/66/000/006/0093/0096

AUTHOR: Michin, V. (Major)

ORG: None

TITLE: River crossing

SOURCE: Voennoy vestnik, no. 6, 1966, 93-96

TOPIC TAGS: ground force training, military engineering, ground force tactic, *FLOATING BRIDGE*

ABSTRACT: A special tactical training of a pontoon company for construction of pontoon ferries is described. The company received an order to march to a river (located at a distance of 30 km) and prepare a river crossing in a fixed area by using five 60-ton pontoon ferries. The locations of the river, roads and various units are shown on a map. The ferries were needed for pushing the pursuit of the enemy on the other bank of the river. The transmission of orders, the deployment of units and detachments, the reconnaissance mission for determining the approaches to the river, the unloading of material, the launching of pontoons and other operations are reviewed in accordance with the prescribed time schedule. A time of 25 minutes was spent on the construction of pontoon ferries. After finishing this work, a new order was received stating that due to an enemy atomic strike against the main march column a new river crossing must be arranged at a site located 10 km upstream. The pontoon ferries were towed to a new location where an

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ACC NR: AP6027576

additional 60-ton pontoon bridge must also be constructed. It was assumed that by moving to a new site the pontoon company must cross a contaminated area. Some decontamination measures are briefly mentioned. Orig. art. has: 1 map.

SUB CODE: 05, 15/ SUBM DATE: None

Card 2/2

BOGLECHANIN, Yu.R., kand. tekhn. nauk; MISHIN, V.A., prof.

Conveyor for heating tops. Der. from. 14 no. 1: 1961. 1961.

1. Sverdlovskiy nauchno-issledovatel'skiy institut teploizolyatsionnoy tekhnologii i stroitel'stva.

GORETSKIY, L.I.; MIKHAYLOV, N.V.; UR'YEV, N.B.; GORSHKOV, S.I.; KOZODAYEV, G.A.;  
MISHIN, V.A.

Machines using colloidal cement glue for repairing airfield and road  
coverings. Mekh. stroi. 20 no.11:22-24 N '63. (MIRA 17:1)

Desulfurization during the fusion of copper concentrates  
V. I. Semirnov and V. D. Mubrin *Trudy Ural Ind. Inst.*  
Astrakhan 1948, No. 5, 3-20; *Khimiya Referat* Zhur. 1, No.  
11-12, 91-2 (1938). — It was shown experimentally that  
the crucible fusion of Cu-contg. substances or their roast-  
ing at 1250-1300° in a neutral atm. (N<sub>2</sub>) gives similar  
results of the degree of desulfurization which are analogous  
to the results of the reflected fusion. Calculations show that  
the degree of desulfurization can be calculated sufficiently ac-  
curately on the basis of the composition of the mixt. from the  
formula:  $\frac{S}{S_{\text{in the mixt.}}} = \frac{S_{\text{in the steam}}}{S_{\text{in the steam}} + S_{\text{in the mixt.}}}$   
For the calculation of the S values in  
the mixt. the contents of the higher sulfides which yield  
on dissociation free S (pyrite, chalcopyrite), the sulfates, and  
the "active solid oxygen" (separated from the reduction of  
Fe<sub>2</sub>O<sub>3</sub> to FeO, from the sulfidation of the Cu oxides, and  
from the dissociation of the sulfates) were taken. In case of  
an excess of the mentioned higher sulfides the desulfuriza-  
tion degree can be accurately determined by the amount of the  
freely available elementary S. In case of an excess of a de-  
ficiency of the higher sulfides the desulfurization depends  
on the active O contained in the oxides and the sulfates.  
The expected degree of desulfurization under plant condi-  
tions can be calculated preliminarily and then verified in the  
lab.

W. R. H. H.

**CIA-RDP86-00513R001134620016-7"**

CA 9  
Roasting sulfide ores and concentrates in the sus-  
pended state V. D. Mishin *Trudy Inst. Inz.*

1940, No. 14, 47-51. *Akron. Referent Zhur* 1940, No. 1, 1-11. Fine grained Cu sulfide and Cu-Zn sulfide concentrates, pyrite tailings and ore from the Ural region were treated in a bath furnace. The optimum velocity of introduction of the material was 1 g per 1 min, which corresponded to 14 kg Cu in the under production conditions. The max temp at which a content of 5% S or less was obtained is 1150°. The content of S in the ash decreases sharply with the decrease in the size of the particles. For practical purposes a 100/50 mesh material is suitable. The upper draft in the furnace permits the particles to remain in suspension longer. This improves the effectiveness of the process. Copper is best recovered from the ash by chloridizing (with 20% NaCl at 60°) or by leaching with 10% H<sub>2</sub>SO<sub>4</sub> + 10% NaCl. W. R. Hume

ASB 51.4 METALLURGICAL LITERATURE CLASSIFICATION

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CA

Investigation of the converter slag in Ni recovery  
V. I. Sviridov and V. D. Mishin *Prosvet Metal* 16  
No. 5, 24-7 (1941). (Chem. Zvest. 1942, II, 2410). The  
initial and final slag (IS and FS) in the melting of Ni in  
the converter consists of 70% of fayalite with amorphous  
FeO exchange by Mg and magnesia inclusions (2-3.5%) in  
the slag from the middle of the melt and 11-22% in FS.  
The slag contains 0.4-0.5 mg grain size. The NiS  
content is 0.70% in IS and 0.60% in FS. The over-  
all content together with metallic Ni, as determined by  
fusion at 900°C, is 12%. By reduction with 10-15% Ni  
Ni oxides were found. The slag contains in addition metallic  
Ni, Co and Fe, Cu and small amounts of MgS, CaS and  
Al<sub>2</sub>O<sub>3</sub>. The total content of Ni and Co is much greater  
in FS than in IS. Co forms the same compounds as Ni.  
However, the content of Co and Cu in FS is only 1-2%.  
By more slag segregation, 20-40% Ni and 10-15% Co  
can be recovered. A 20-30% Ni and 10-15% Co  
the amounts to 90% Ni and 22% Co. By flotation of slag  
of 2-7% Ni content, 0.1-0.2% Ni and 20-22% Co can be  
recovered at best. In this case the Ni removal from IS  
is considerably higher than from FS. This indicates  
that Ni is initially admixed in metallic form and becomes  
slag during the course of the melt. The slag portion  
Ni silicate and solid Ni compounds is 0.40% in IS and  
0.65% in FS. The slag portion of Co (CoO) in FS is as  
high as 7.5-8.5%. Frederick C. Nashen



[illegible]

130-7-17/24

AUTHORS: Arkhipova, M.S., Mishin, V.D., Smirnov, N.S., also Koftaz, R.,  
and Kanonykhin, G.I. and Lysakov, V.S.

TITLE: Symposium on Tin Economy in Tin-Plate Manufacture. (Ekonomiya  
olova pri proizvodstve beloy zhesti)

PERIODICAL: Metallurg, 1957, Nr 7, pp.30-34 (USSR)

ABSTRACT: The tin consumed in hot-dip tinning accounts for about half the cost of the tin-plate; only 75-80% of the tin is used for coating the sheet, the rest goes into various waste products: mainly flux and oil scum and crystals of the alloy  $FeSn_2$  embedded in lumps of pure metallic tin. Recently ways of extracting tin from these waste products have been developed at various Soviet works and these are described in this symposium. The first contribution (pp.30-32) is by M. S. Arkhipova and V.D. Mishin of the Ural Polytechnic Institute and N.S. Smirnov of the Seversk Metallurgical Works. This describes pilot-plant work on the development of a hydro-metallurgical method of extracting tin from flux scum at the Seversk works; a full-scale plant has been working there since 1954. Flow diagrams for the process are given, together with a graph showing degree of extraction of tin against time of cementation, and optimal conditions are summarised. In the

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130-7-17/24

Symposium on Tin Economy in Tin-Plate Manufacture.

second contribution (pp.32-33), by R. Koftan, Director of the Central Works Laboratory at the Novomoskovskiy tin-plate works, describes the hydrochemical method developed and tested at these works for the extraction of tin from flux dross which has been pre-treated with soda. Flow diagrams for the new and the old, furnace, method are given and yields contrasted. The advantages of the new method are shown and it is suggested that tin losses at the works could be reduced by 3-4% by its adoption. At the "Amurstal" works, as explained by G. I. Kanonykhin (Head of the chemical laboratory) and V. S. Lysakov (Deputy Head of the technical control department) in the third contribution (pp. 33-34) a simplified form of the Seversk works method is used. The authors describe this with a flow diagram and mention that the installation must be in a separate space provided with extraction and feed ventilation. There are 4 figures and 1 table.

AVAILABLE: Library of Congress.

Card 2/2

MISHIN, V.D.; SMIRNOV, V.I.; ARKHPOVA, M.S.

Reprocessing the stannic wastes of a tinplating plant. Trudy Ural.  
politekh.inst. no.58:22-112 '57. (MIRA 11:4)  
(Tin industry--By products)

MISHIN, V.D.; KARANOVA, L.M.

Temperature conditions and kinetics of silicate, aluminate and  
ferrite formation of cobalt oxide. Trudy Ural.politekh.inst.  
no.58:113-127 '57. (MIRA 11:4)  
(Cobalt aluminate) (Cobalt silicate) (Cobalt ferrates)

MISHIN, V.D.; KABANOVA, L.M.

Reducibility and sulfidation of oxidized cobalt compounds. Trudy  
Ural.politekh.inst. no.58:128-144 '67. (MIRA 11:4)  
(Cobalt compounds)

MISHIN, V.D.; SMIRNOV, V.I.; FOKIN, V.V.

Zinc recovery from blast-furnace dust. Biul.TSIIN tsvet.net.  
no.10:16-20 '58. (MIRA 11:9)  
(Zinc--Metallurgy)

MISHIN, V.D.; KHUDYAKOV, I.F.

Volatility of tin and zinc compounds during operations of a  
tinning stack. Trudy Ural. politekh. inst. no.98:11-15 '60.  
(MIRA 14:3)  
(Tinning—Equipment and supplies) (Volatility)



MISHIN, V.D.; FOKIN, V.V.

Zinc recovery by the method of leaching ferrous metallurgy wastes.  
Trudy Ural. politekh. inst. no.98:72-79 '60. (MIRA 14:3)  
(Leaching) (Zinc)

MISHIN, V.D.; YABLONSKIY, Yu.A.

Complete use of the ores of Beregovskiy deposit in the Urals.  
Trudy Ural.politekh. inst. no.98:30-89 '60. (MIRA 14:3)  
(Berezovskiy(Ural Mountains—Nonferrous metals))

FOKIN, V.V.; MISHIN, V.D.; SMIRNOV, V.I.

Studying the behavior of nonferrous and rare metals during  
the treatment of furnace dusts by the Waelz process. Trudy  
Alt.GIMNII AN Kazakh.SSR 11:21-25 '61. (MIRA 14:8)  
(Nonferrous metals--Metallurgy) (Fly ash)

SMIRNOV, Vasiliiy Ivanovich; KHUDYAKOV, Ivan Fedorovich; TIKHONOV,  
Anatoliy Ivanovich; KIL'DIBEKOV, R.G., retsenzent; MISHIN,  
V.D., red ; KRYZHOVA, M.I., red. izd-va, MATLYUK, R.M.,  
tekhn. red.

[Obtaining cobalt from converter slags] Izvlecheniye kobal'ta  
iz konverternykh shlakov. Sverdlovsk, Metallurgizdat, 1963.  
150 p. (MIRA 16:5)

(Cobalt) (Slag)

ILCHEV, S.L.; SMIRNOV, V.I.; MISHIN, V.D.

Technical progress in plants of nonferrous metallurgy in the  
People's Republic of Bulgaria. TSvet. met. 36 no.8:92-94  
Ag '63. (MIRA 16:9)  
(Bulgaria--Nonferrous metal industries)

MISHIN, V.I., inzh.

Self-hoisting double-boom crane used in erecting metal structural  
components of television towers. Nov.tekh. i pered. op. v stroi.  
19 no.12:24-27 D '57. (MIRA 11:1)  
(Cranes, derricks, etc.)

GULYAYEV, A.P.; SMOLEST, A.Ye.; MISHIN, V.I.; KOSSAKOVSKAYA, N.N.; PAVLOV, I.M.

Effect of heating in various gaseous media on the impact toughness of commercial titanium. Titan. tekhn. zhurn. no.10:272-274, 1969. MIRA 17:1,

WISHIN, V.I.

Geometrical transformations in the plane of the  
eighth grade of the secondary school. (1971)  
1971.  
(Geometry, Plane)



MISHIN, V.I.

Laboratory work in a mathematics course in secondary schools. Uch.  
zap. MGPI 151:245-267 '60. (MIRA 16:4)  
(Mathematics--Study and teaching)

MISHIN, V.I. (Moskva)

Quality of mathematical knowledge retained by secondary school  
graduates. Mat. v shkole no.2:47-49 Mr-Apr '62. MIRA  
(Mathematics--Study and teaching)

MISHIN, V.I. (Moskva)

Studying functions in eight-year schools. Mat. v shkole no.1:  
40-43 Ja-P '63. (MIRA 16:6)  
(Functions—Problems, exercises, etc.)

LEVATIK, Ye.P.; MISHIN, V.I.; PEVNEP, M.B.; SHKOLYAR, M.S.

Equipment for the continuous measurement of liquid metal  
temperature in the bath of an open-hearth furnace. Met.  
i gornorud. prom. no. 6: 3-65 N-6 '65. MIRA 19.12

ACCESSION NR: AT4007049

S/2598 /63/000/010/0262/0264

AUTHOR: Gulyayev, A. P., Shelest, A. Ye., Mishin, V. I., Kossakovskaya, N. N., Pavlov, I. M.

TITLE: Effect of furnace atmosphere on notch toughness of commercial grade titanium

SOURCE: AN SSSR Institut metallurgii Titan i yego splavy\*, no 10, 1963  
Issledovaniya titanovy\*kh splavov, 262-264

TOPIC TAGS: titanium, titanium property, titanium notch toughness, titanium embrittlement, titanium heat treatment, heat treating furnace, furnace atmosphere, oxidizing atmosphere, protective atmosphere, protective coating

ABSTRACT: Specimens of hot-rolled titanium sheet with an initial impact toughness of  $6 \text{ kg-m/cm}^2$  were heated in quartz ampoules in an atmosphere of air, oxygen or nitrogen or in a vacuum (0.01 mm Hg) at temperatures of 700-1200C for 10, 60 or 120 minutes, after which the specimens were tested for impact toughness, microhardness and weight of oxide film formed. Heating in a vacuum had no significant effect on either weight or impact toughness. Determination of sample weight after removal of the scale showed that oxidation increases with time and increasing temperature, and is markedly decreased in a

Card 1/3

ACCESSION NR: AT4007049

nitrogen atmosphere, especially at high temperatures. However, as shown in Fig. 1 of the Enclosure, prolonged heating in nitrogen at 900C or above reduces the impact toughness, so that nitrogen atmospheres also cannot be recommended. The impact toughness, which increased somewhat on heating at low temperatures due to recrystallization, decreased sharply at 800-1200C in air or vacuum. Measurements of the depth of the gas bubble in the cast metal showed that the depth of the gas bubble in the cast metal was about 0.1 mm. Measurements of the depth of the gas bubble in the cast metal showed that the depth of the gas bubble in the cast metal was about 0.1 mm.

As a result of the above, it is recommended that the following conditions be observed:

SUBMITTED: 06	DATE REC'D: 27 Dec 62	FILED: 01
SUB CODE: MM	NO RET SOV: 000	OTHER: 00

Cord 2/3

ACCESSION NR: AT4007049

ENCLOSURE: 01

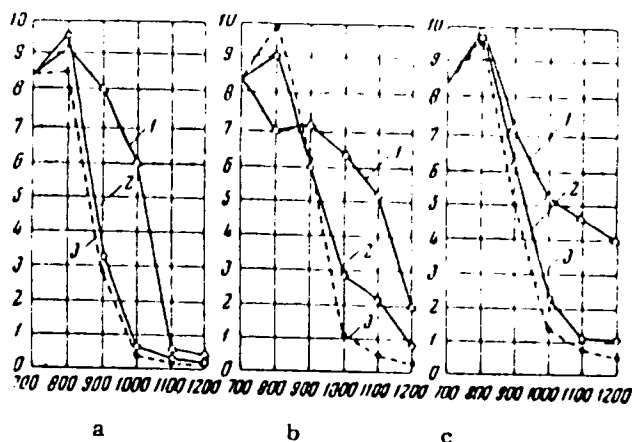


Fig. 1. Effect of temperature, duration of heating and furnace atmosphere on the impact toughness of commercial grade titanium. a. heating in air, b. heating in oxygen, c. heating in nitrogen; 1 - heated for 10 min.; 2 - heated for 60 min.; 3 - heated for 120 min. Ordinate = impact toughness in kg-m/cm<sup>2</sup>; abscissa = temperature of heating in °C.

Card 3/3

MISHIN, V. M., Candidate Tech Sci (diss) -- "Investigation of the vibration of certain automobile parts". Moscow, 1959. 21 pp (Min Higher Educ USSR, Moscow Automotive Mech Inst, Chair of "Automobile Building"), 110 copies (EL, N 10, 1959, 110)



(

SOV 7007-00-5-8/01

AUTHOR: Mishin, V.M.

TITLE: A Vibration Measuring Apparatus

PERIODICAL: Avtomobil'naya promyshlennost', 1984, Nr 5, pp 21 - 23 (USSR)

ABSTRACT: At NII AVTOPRIBOROV a two-channel apparatus was designed and built, which is successfully used for measuring and recording the acceleration, velocity and shift of vibrations at two different points of an automobile. The author explains the functioning of the apparatus in detail. The signal from a vibration pick-up, as shown in Figure 2, is amplified and recorded by frequency modulation on conventional magnetic tape. This signal is proportional to the vibration acceleration. In the laboratory, the signal is reproduced and after passing thru a detector stage it is recorded by oscillographic methods, thus an oscillogram of the vibration acceleration is obtained. In addition this signal is integrated

Card 1/3

SCV/113-59-5-8/21

A Vibration Measuring Apparatus

in an electronic integrator, producing a signal proportional to the vibration velocity. This signal is also recorded by an oscillogram. The introduction of the intermediate recording on magnetic tape reduced dimensions and weight of the measuring equipment installed on an automobile for investigation of vibrations, enabling the utilization of electronic integrators which do not function reliably when installed on the automobile itself. The author presents a block diagram of the device in Figure 1. Further, there are photographs of the tape winding mechanism, the recorder unit, the two-channel magnetic head and the reproducing unit. Figure 8 shows a sample of a vibrogram. The recorder unit contains 12 vacuum tubes and 8 germanium diodes. Its dimensions are 330x400x190 mm; its weight is 16.5 kg.

Card 2/3

SIW/113-54-5-8/21

#### A Vibration Measuring Apparatus

The tape winding mechanism has the dimensions of 435x330x300 mm and a weight of 21 kg. For the operation of the device 200 watts power are required. There are 5 photographs, 1 block diagram, 1 vibrogram and 1 Soviet reference.

ASSOCIATION: NII AVTOPIBIRIV

Card 3/3

*MISHIN, V. M.*

USSR/ Geophysics

Card 1/1      Pub. 22 - 14/50

Authors      : Mishin, V. M.

Title        : About basic types of geomagnetic activity

Periodical   : DOK. AN SSSR 100/1, 53-56, Jan. 1, 1955

Abstract     : An analysis of the K-indexes representing magnetic activity of the earth (a special scale) is presented. The K-indexes were taken from magnetograms obtained at the Zuy observatory at Irkutsk (41°) and at three other stations. The diagrams with their explanation in the text show the results of the analysis. Nine USSR references (1940-1953). Diagrams; tables.

Institution: The Voznesenskiy Irkutskaya Scientific Research Geophysical Observatory  
Voznesenskiy

Presented by: Academician G. A. Gamburtsev, June 21, 1954

MISHIN, V.M.

Study of magnetic activity according to the Irkutsk index K. Trudy  
NIIZM no.11:122-143 '55. (MLBA 9:8)  
(Magnetism, Terrestrial)

37-11-6/18

AUTHOR: Nikol'skiy, A.P.

TITLE: Regarding N. P. Ben'kova's and M. G. Borisova's article  
"Index K Based on Data from the Pavlovsk Magnetic Observatory for the Years 1916-1939" (Po povodu stat'i N.P. Ben'kovoy i M. G. Borisovoy "Indeks K po dannym Pavlovskoy magnitnoy observatorii za 1916-1939 gg.")

PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo magnetizma, 1957, Nr 11(21), pp. 111-118 (USSR)

ABSTRACT: This is a review on the frequency distribution of magnetic activity and the daily, yearly and 11-year cycles. The following authors are mentioned: Kalitina, G.N., Mishin, V.M., and Kozik, S. M. There are 2 figures and 4 references, all USSR.

AVAILABLE: Library of Congress

Card 1/1

37-11-8/18

AUTHOR: Mishin, V. M.

TITLE: Analysis of Magnetic Activity through K-Indices at  
Irkutsk (Issledovaniye magnitnoy aktivnosti po Irkutskim  
K-indeksam)

PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo  
magnetizma, 1957, Nr 11(21), pp. 122-143 (USSR)

ABSTRACT: The author reviews the daily and seasonal variations  
and the cyclic run of daily perturbations in magnetic  
activity and discusses Al'fven's theory. The following  
authors are mentioned: Ol', A.I., Eygenson, M.S.,  
Gnevyshev, M.N., Fedchenko, K.K., and Isayev, S. I.  
There are 10 figures, 10 tables, and 16 references, of  
which 13 are USSR and 3 English.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Mishin, V. M.

20-118 -10,43

TITLE: On the Structure of the Diurnal Course of Magnetic Activity  
(O strukture sutochnogo khoda magnitnoy aktivnosti)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, No. 1,  
pp. 1109-1112 (USSR)

ABSTRACT: The present paper uses the 5-year-old data on the diurnal course  $S_a$  of the magnetic activity of 34 observatories on the northern and 7 observatories on the southern hemisphere. The author investigates here the problem of the structure of  $S_a$  and of the nature of its natural components. Here the relation  $S_a = S'(t) + S''(T)$  is assumed, whereby  $t$  denotes the local time and  $T = t + \lambda$  the world time. The corpuscular currents which cause the magnetic disturbances move first according to the laws of the theory of Chapman - Chapman - Ferraro, and then in the trajectories of Stormer (Sternberg). A relation for the lower boundaries of the width of the zone in which the particles are deposited is written down. First it is shortly reported on a process for the determination of the semiannual component of the activity. As the harmonic analysis shows, the differences  $S_a - S''$  are well determined

Card 1/3



On the Structure of the Diurnal Course of Magnetic Activity

by the first term of the Fourier series, similar to  $S''$ . The initial phases  $\varphi_1$  of the first harmonics of the curves  $S_a - S''$  are illustrated in a further diagram. Then a formula for  $\tan \varphi$  is written down. A further component exists with respect to world time which is here denoted by  $S'''$ . The amplitudes and the phases of the first harmonics  $S'(t) = S_a - S'' - S'''$  are illustrated here in a diagram. The data given here speak in favor of the existence of two types of  $S'$ ; the one (with a maximum at approximately noon) predominates near the magnetic equator, and the second (with a maximum at approximately midnight) predominates near the zone of aurorae polaris. The function  $S'$  can therefore be written down as follows:  $S'(t) = R \cos(t - \gamma) = a(\Phi) \cos(t - \alpha) + b(\Phi) \cos(t - \beta)$ . The authors assumed here  $\alpha = 0^\circ$  which is confirmed by the data of different seasons and the data of calm days. For the determination of the values of  $\beta$  the author used the values concerning the daily alterations of the sudden commencement sc of the magnetic storm. The nature of the component  $S'''$  is obviously determined by the influence of the rotation of the magnetic axis on the position of the traces of the main directions of incidence in the atmosphere. There are 3 figures, 1 table, and 12 references, 5 of which are Soviet.

Card 2/3

On the Structure of the Diurnal Course of Magnetic Activity 20-118-6-16/43

ASSOCIATION: Magnito-ionosfernaya stantsiya Nauchno-issledovatel'skogo instituta zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln pri radiostantsii N<sup>o</sup> 1 Irkutskogo oblastnogo radiotsentra (Magnetic Ionosphere Station of the Scientific Research Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves at the Radio-station N<sup>o</sup> 1 of the Irkutsk Oblast Radiocentre)

PRESENTED: December 13, 1957, by V. V. Shuleykin, Member of the Academy of Sciences, USSR

SUBMITTED: January 14, 1957

Card 3/3

MISHIN, V. M. Cand Phys-Math Sci -- (diss) "Certain general laws of geomagnetic activity." Mos, 1959. 16 pp with graphs. (Acad Sci USSR. Inst of Physics of the Earth im O. Yu. Shmidt) Printed by duplicating machine. Bibliography: sheet 16 (20 titles) (KL, 49-59, 137)

89799

9.9110 (2603, 1041, 1046)

3/159/51/1001 - 2.17.17  
Aug 5/1003

Translation from: Referativnyy zhurnal, Geofizika, 1959, No. 3, p. 32, # 41222.

AUTHORS: Mishin, V. M., Shonepkin, L. A.

TITLE: Perturbations in the F2-Layer According to Observations at Irkutsk

PERIODICAL: "Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomsk. un-te", 1959, No. 3, pp. 57-61

TEXT: The statistical regularities of the activity of the F2-layer are investigated, i. e., of the irregular fluctuations of the parameters  $f_oF_2$  and  $h'F_2$ . Materials from observations at Irkutsk from the period 1943-1952 are used. As a measure of "activity", the deflections  $\Delta f$  and  $\Delta h$  from the median values of the corresponding magnitudes are taken which were obtained by stable days (in the sense of the undisturbed ionosphere state). The correlation between the intensity of the horizontal component of the Earth's magnetic field and  $\Delta f$  is close to zero. Hence it follows that the influence of magnetic effects on the perturbation of the F2-layer is small. The fluctuations  $|\Delta f|$  in all years have a maximum about midday. The diurnal course of the magnitude  $|\Delta h|/f_oF_2$  differs from the course

and 1/3



89799

3/169/61/000/003/117/001  
A005/A005

Perturbations in the F2-Layer According to Observations at Irkutsk

possible variation in intensity of the ionizing agent  $\delta I_0$  is estimated. By a summer day is  $\delta I_0 > 0$  for  $\Delta f < 0$ . In winter  $\delta I_0$  agrees in sign with  $\Delta f$ .

L. Shchepkin

Translator's note: This is the full translation of the original Russian abstract.

Card 3/3

89779

S/169/61/000/002/034/009  
A005/A001

3.9100

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 1, p. 49, # 20346

AUTHOR: Mishin, V. M.

TITLE: On the Structure and Nature of the Diurnal Course of Magnetic Activity

PERIODICAL: V sb.: "Vozmushcheniya elektromagnitn. polya Zemli". Moscow, AN SSSR, 1960, pp. 36-44 (English summary)

TEXT: The diurnal course of magnetic activity ( $S_a$ ) was investigated using the data of 41 observatories at geomagnetic latitudes from  $-48^\circ$  to  $+80^\circ$  (chiefly  $\phi \leq 66^\circ$ ). The K-indices over 3-6 years are used.  $S_a$  is presented by the sum of four functions:

$$S_a = S_1^I(t) + S_{1-}^I(t) + S''(T) + S'''(T),$$

where  $t$  is the local time,  $T$  is the universal time. For each of the four functions the analytical expressions in terms of  $t$  or  $T$  and space coordinates are found. For ten observatories the results are presented of the comparison of the actual

Card 1/2

89779

S/169/51/000/002/034/039  
A005/A001

On the Structure and Nature of the Diurnal Course of Magnetic Activity

$S_a$  and the  $S_a$  computed by the analytic expressions found. Considerations are expressed on the physical nature of each of the four components of  $S_a$ .

V. A.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2



89780

S/169/61/000/002/035/039  
A005/A001

9.9500  
3.9100

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, pp. 49-50,  
# 20341

AUTHORS: Mansurov, S. M., Mishin, V. M.

TITLE: The Diurnal Course of Magnetic Activity in the Polar Region

PERIODICAL: V sb.: "Vozmushcheniya elektromagnitn. polya Zemli". Moscow,  
AN SSSR, 1960, pp. 45-52 (English summary)

TEXT: The diurnal course of magnetic activity  $S_a$  was investigated from data on the K-index of magnetic activity obtained by 30 observatories of the northern and southern hemispheres at geomagnetic latitudes  $\phi > 60^\circ$ . The data were used which were obtained during the IPY and various years of the period 1940-1958. The Fourier coefficients of the two first harmonics of  $S_a$  were computed. The problem of two components of  $S_a$  is considered: the term  $S''(t)$  connected with the non-coincidence of the magnetic and geographic axes of the Earth, and the term  $S'(t)$ , dependent on the local time. The consideration of the data on  $S'(t)$  led to the conclusion that a zone of increased magnetic activity exists in the vicinity of

Card 1/2

89780

S/169/61/000/002/035/039  
AC05/AC01

The Diurnal Course of Magnetic Activity in the Polar Region

$\phi = 77.5^\circ$ . It is presumed that this zone is connected with the increased electrical conductivity of the ionosphere. For  $S''$ , expressions for the dependence of the corresponding Fourier coefficients on the longitude were obtained.

V. A.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

3.9000

S/049/60/000/01/019/027

E201/E191

82249

AUTHORS: Mishin, V.M., and Barsukov, O.M.

TITLE: The Diurnal Variations of the Telluric Currents <sup>127</sup>  
According to the Data of Soviet Stations during the  
I.G.Y.

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya.  
1960, No 1, pp 148-150

TEXT: The diurnal variations of the telluric currents were analysed using the E-indices of activity defined as the hourly values of the amplitudes  $R$  of tellurograms. The tellurograms were obtained at a scanning rate of 90 mm/hour. These indices were averaged out for three seasons (summer, winter and equinox) using

$$E_1 = 1/n \sum_{n=1}^n R_1, n$$

where  $n$  is the number of 24-hour periods employed in averaging, and  $1$  is the number of a particular hour. The authors used the data obtained at Soviet stations, both in the Antarctic

Card 1/3

S/04-9/60/000/01/01-00  
E201/E191

The Diurnal Variations of the Telluric Currents According to the Data of Soviet Stations during the I.G.Y.

1. "Oazis", "Mirnyy" and in the USSR, as well as data of other Soviet stations (Table 1). The analysis of these results (Figs. 1 and Table 2) showed that the mean component of the diurnal variation of telluric currents is a wave with a period of 24 hours. The wave consists of two parts with maxima occurring close to midnight, and with amplitudes which depend on latitude. The first of these parts is due to a dynamo effect in the ionosphere, and the second is due to screening by the ionosphere in middle latitudes and a night maximum of conductivity (due to corpuscular streams) in high latitudes. Similar behavior was earlier reported in the diurnal variations of the telluric magnetic fields, with periods from several seconds to a minute. V. A. Troitskaya, at the May 1959 seminar of the Laboratory of Magnetometry, Institute of Physics of the Earth, Acad. Sci. USSR. There are 2 figures, 2 tables and 1 Soviet reference.

Card 2/3

S/049/60/000/01/014/0  
E201/E191 82249

The Diurnal Variations of the Telluric Currents A ...  
Data of Soviet Stations during the I G Y

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zem.  
(Institute of Physics of the Earth, Academ. :  
Sciences, USSR)

SUBMITTED: June 29, 1959

Card 3/3

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MISHIN, V.M.; KALINOVSKAYA, G.I.; MISHINA, N.A.

Yearly variations of magnetic activity according to the data  
of the International Geophysical Year. Geomag. i aer. 1 no.3:  
387-394 My-Je '61. (MIRA 14:9)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya  
radiovoln Sibirskogo otdeleniya AN SSSR.  
(Magnetism, Terrestrial)



MISHIN, V.M.; NEMTSOVA, E.I.

Some results of comparing magnetic disturbances in the Northern  
and Southern Hemispheres. Geomag. i aer. 1 no.3:404-407 My-Je  
'61. (MIRA 14:9

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya  
radiovoln Sibirskogo otdeleniya AN SSSR.  
(Magnetic storms)

MISHIN, V.M.; MAYDENOVA, N.Ya.; SHCHUKINA, T.B.

Yearly variation of the frequency of magnetic storms. Geomag.  
i aer. 2 no.2:321-325 Mr-Apr '62. (MIRA 15:6)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya  
radiovoln Sibirskogo otdeleniya AN SSSR.  
(Magnetic storms)

S/203/62/002/003/012/021  
I023/I250

AUTHOR: Mishin, V.M. and Zhulin, I.A.

TITLE: Some problems of the geomagnetic activity. I.

PERIODICAL: Geomagnetizm i Aeronomiya, v.2, no.3, 1962, 502-509

TEXT: The laws governing the space-time distribution of the geomagnetic activity are investigated. Several existing interpretations of the irregular geomagnetic disturbances  $D_i$  are discussed. The theory of Nikol'skiy (application of Stormer's theory for the explanation of the geomagnetic activity) is proved to be unsound. A system of currents corresponds to the field of  $D_s$  (the diurnal variation of the geomagnetic disturbances). It is suggested that the distribution of the current density in this system can be explained by the dynamo-theory. The dependence of a part of the geomagnetic activity on  $\sqrt{\cos z}$ , where  $z$  is the zenith angle of the Sun, is discussed. There are 5 figures, 18 references.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostra-  
Card 1/2

S/203/62/002/003/012/021  
1023/1250

Some problems of the geomagnetic...

neniya radiovoln Akademii nauk SSSR (Institute of  
Terrestrial Magnetism, Ionosphere and Radiowave  
Propagation, Academy of Sciences USSR)

SUBMITTED: January 11, 1962

Card 2/2

LATYPOVA, R.Kh.; MISHIN, V.M.; TROSHICHEV, O.A.; FEDCHENKO, Z.A.

Apropos of M.S. Bobrov's article "Overall planetary picture  
of geomagnetic disturbances of corpuscular origin." Geomag.  
i aer. 2 no.3:553-560 My-Je '62. (MIRA 15:11)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya  
radiovoln Sibirskogo otdeleniya AN SSSR.  
(Cosmic rays) (Magnetic storms)

AUTHORS:

Mishin, V. M., Naydenova, M. Ya., Platonov, M. L.

8/203/62/002/006/010/020  
A160/A101

TITLE:

The diurnal variation of the probability of the appearance of the commencements, the active periods and the ends of magnetic storms

PERIODICAL:

Geomagnetizm i aeronomiya, v. 7, no. 6, 1962, 1107 - 1112

TEXT:

The authors investigate the probability of the appearance of the commencements, the active periods and the ends of magnetic storms on the basis of the Irkutsk Storms Catalog for 1905 - 1917 and 1925 - 1959. The catalog describes 820 storms. A total of 530 of them are storms with a gradual commencement. Figure 1 presents the curves  $S_{nb}$  (nb),  $S_{an}$  (ap) and  $S_a$  for Irkutsk. Ordinates in curve 1 represent the frequencies of the commencement of the 0-storms  $n_{nb}$ , in curve 2 - the frequencies of the active hours  $n_{ap}$ , and in curve 3 - the equivalent amplitudes  $R_M^2$ . Similar distinctions between  $S_a$  and  $S_{nb}$  were also observed at all other stations. These data, characterizing the phases of the maximum of the first harmonic of  $S_a$  and  $S_{nb}$ , are presented in a table. The authors explain these results by proposing that  $S_{nb}$  may be considered as a re-

Card 1/3

S/203/62/002/006/010/020  
A160/A:01

The diurnal variation of the...

sult of  $\Delta a$ . It is followed that the probability of a contact of the corpuscular flux with the Earth does not depend on the time of the day. This conclusion is confirmed by the fact that, according to the mentioned catalog, the diurnal variation of the frequency of SC practically does not exist. The authors then investigate the total of all storm days and introduce the following four hypotheses. 1) The probability that there is a contact between the flux and the Earth, causing the storm is equal for all hours of a day. 2) The magnetic activity during the hour of the commencement of the storm  $A$  is not lower than that during an average storm  $\bar{A}$ :  $A \geq \bar{A}$ . 3) The values of  $A$  during the initial hours of the storms are determined by  $\Delta a$  on the basis of the perturbed days. 4) The length of each storm is  $\geq 12$  hours. The distribution of the probabilities of the commencement of the storms over the hours of the day  $P(T)$  will be as follows:  $P = 0$  in two 6-hour intervals  $T < x_k - 90^\circ$  and  $T > x_k + 90^\circ$  (Figure 2, hatching),  $P = 1/24$  in the 11-hour interval  $x_k + 90^\circ \geq T > x_k - 75^\circ$ ,  $P = 13/24$  in one hour containing the moment  $T_k = x_k - 90^\circ$ . Such a distribution of the probability  $P(T)$  has the form of a try-square shown on Figure 2. The authors make the following conclusions. 1) It was determined that the commencements of the storms (recorded at the given station) are generally shifted to the side of

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S/203/62/002/006/010/020

A160/A101

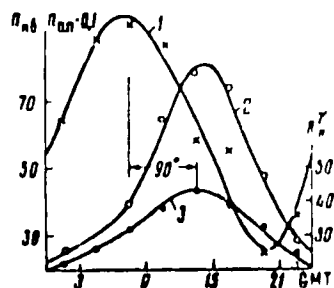
The diurnal variation of the...

delay - as regards the moment of the onset of the flux with the Earth. 2) The inequality of  $\tau_{nb} < \tau_{kb}$  may be explained by the fact that the fluxes causing the G-storms have a shock front. 3) The main result of this work is the description given of the clearly-expressed variations  $S_{nb}$  and  $S_{kb}$ , and the possibility of explaining these variations as a result of... There are 4 figures, and 1 table.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln SO AN SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation of SO, AS USSR)

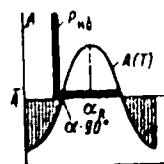
SUBMITTED: June 23, 1962

Figure 1.



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Figure 2.





YEROFEYEV, N.M., otv. red.; MISHIN, V.M., kand.fiz.-matem. nauk,  
red.; POLYAKOV, V.M., kand. fiz.-matem. nauk, zam. otv. red.;  
KUZ'MIN, A.I., kand. fiz.-matem. nauk, red.; NIKOLAYEVA, L.K.,  
red. izd-va; RYLINA, Yu.V., tekhn. red.

[Studies on geomagnetism and aeronomy] Issledovaniia po geo-  
magnetizmu i aeronomii; doklady. Moskva, Izd-vo Akad. nauk  
SSSR, 1963. 149 p. (MIRA 16:6)

1. Sibirskoye soveshchaniye po geomagnetizmu i aeronomii. 1st,  
Irkutsk, 1961. 2. Chlen-korrespondent Akademii nauk Turkmenskoy  
SSR (for Yerofeyev).  
(Magnetism, Terrestrial) (Atmosphere, Upper)

MISHIN, V. M.

"About the Structure Sa, the Position of the Magnetosphere Neutral Points and the Spectrum of the Soft Solar Corpuscular Radiation."

abstract to be presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 19-31 Aug 63.

ACCESSION NR: AP4001831

S/0203/63/003/006/1073/1078

AUTHOR: Mishin, V. M.

TITLE: Some questions of magnetic activity. II. (Answer to the remarks of A. P. Nikol'skiy and A. I. Ol' [1])

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 6, 1963, 1073-1078

TOPIC TAGS: magnetic activity, isochronal spiral, circumpolar magnetic activity, second magnetic activity zone, harmonic analysis, magnetosphere, magnetospheric neutral point, soft corpuscular radiation, energy spectrum, solar corpuscular radiation, astronomy, radiation energy spectrum, magnetospheric disturbance, magnetic activity, geomagnetism, diurnal magnetic activity

ABSTRACT: In answer to A. P. Nikol'skiy and A. I. Ol' (Geomag. i aeronomiya, 1963, 3, No. 2, 370) the author shows that their results and conclusions on the existence of secondary circumpolar, magnetically active zones can be subjected to a harmonic analysis  $S_a(k)$ . He reviews his original assumptions with I. A. Zhulin (Geomagn. i aeronomiya, 1962, 2, No. 3, 502) and particularly their criticism regarding the amplitudes  $a$  and  $b$  of the first harmonic of  $S'(t)$ , or

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ACCESSION NR: AP4001831

$$r \cos (\varphi - \alpha) = a (\varphi) \cos (\varphi - \alpha) + b (\varphi) \cos (\varphi - \beta).$$

Unlike the assertions of Nikol'skiy and Ol', the author claims that  $a$  and  $b$  depend on the latitude with the predominant day-wave near the equator and the night-wave near the polar caps. He further claims that previous investigations limited the harmonic analysis to  $S_a = S'(t)$ , whereas he introduces the improvement  $S_a = S'(t) + S(T)$  from which follows the diurnal variation of magnetic activity of the type

$$\overline{R}_1 \sim \sqrt{\cos z}$$

The author sets out to derive this type of a perturbation in detail to support his original method of harmonic analysis. Orig. art. has: 7 formulas and 1 table.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln  
SO AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Radio Wave  
Propagation SO AN SSSR)

SUBMITTED: 17Dec62

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ENCL: 00

SUB CODE: AS

NO REF SOV: 009

OTHER: 000

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ACC NR: AP6011707

SOURCE CODE: UR/0203/66/006/002/0365/0369

34  
BAUTHOR: Vershinina, T. I.; Gorovoy, M. D.; Latypova, R. Kh.; Mishin, V. M.ORG: Institute of Terrestrial Magnetism, the Ionosphere, and Radio-Wave Propagation, SO  
AN SSSR (Institut zemnogo magnetizma ionosfery i rasprostraneniya radiovoln SO AN SSSR)TITLE: Two quasicircular zones of maximal magnetic activity

12

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 2, 1966, 365-369

TOPIC TAGS: magnetic activity, ionosphere

ABSTRACT: In this investigation the authors attempted to determine the position of the zone of maximum magnetic activity during July and December, 1958, using for this purpose the magnetograms of 21 observatories, the coordinates of which are given in a table. The curves of the latitudinal distribution of magnetic activity along 12 successive meridians of local geomagnetic time and the "instantaneous" charts of the zones of maximum magnetic activity and the zones of the maxima of the latitudinal variation of activity are plotted. The last two represent quasicircular zones centered on geomagnetic latitudes 66 and 78°. The conclusion concerning the existence of two quasicircular zones of maximum magnetic activity at latitude 66° and 78° confirms previously made hypotheses that the latitudinal belts near 66° and 78° coincide with zones of increased conductivity of the ionosphere disturbed by corpuscular intrusions. One of these hypotheses was developed from an analysis of the latitudinal distribution of the parameters of the LT-component of the diurnal variation of the magnetic

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ACC NR. AP6011707

activity and the other hypothesis from an analysis of the latitudinal distribution of the parameters of the  $U F$ -component of the diurnal variation of the magnetic activity. Consequently, the conclusion of the existence of two quasicircular zones of high conductivity of the disturbed ionosphere can be considered as confirmed in three different and independent investigations. The results of this study do not contradict the conclusion concerning the existence of an "oval" zone of maximum magnetic activity if the latter term indicates the maxima of  $S_a$ . The figures show that in each hemisphere two regions of maximum activity encompassing sections of the quasicircular zones are observed during the summer. These two regions are divided by a space of relatively low activity and do not form a closed oval. Orig. art. has: 1 table, 3 figures, and 2 formulas.

SUB CODE: 08 / SUBM DATE: 03Sep64 / ORIG REF: 010

Card 2/2

ACC NR: AT6034607 SOURCE CODE: UR/3148/66/000/008/0005/0022

AUTHOR: Bazarzhanov, A. D.; Mishin, V. M.; Nemtsova, E. I.; Platonov, M. L.

ORG: none

TITLE: A method of analytical representation of instantaneous fields of magnetic variations

SOURCE: AN SSSR. Mezhdunarodnyy geofizicheskiy komitet. III razdel programmy MGU (Geomagnetizm i zemnyye toki). Sbornik statey, no. 8, 1966. Geomagnitnyye issledovaniya (Geomagnetic research), 5-22

TOPIC TAGS: geomagnetic field, spheric harmonic, universal time, algorithm, probable error, *geomagnitnyye issledovaniya*

ABSTRACT: A geomagnetic field can be expressed by the spherical harmonic analysis completed by Legendre polynomials. This method was corrected and made independent of universal time. A special method was elaborated for the use for electronic computers by which instantaneous parameters of the variable magnetic field can be determined. This method is based on a special algorithm B in which components of the geomagnetic field  $X_1$ ,  $Y_1$ , and  $Z_1$  of selected stations are determined

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ACC NR: AT6034607

using the formula

$$X(\theta_i, \lambda_i) = \sum_{n=1}^M \sum_{m=0}^n (g_n^m \cos m\lambda_i + h_n^m \sin m\lambda_i) \left[ \frac{dP_n^m(\cos \theta)}{d\theta} \right]_{\theta=\theta_i}$$

$i = 1, 2, 3, \dots, N$ , where  $N$  is the number of stations used. The system of equations can be solved analytically when  $N \leq M^2 + 2M$ . When  $N > M^2 + 2M$ , the system can be solved by the method of least squares applying the orthogonal system of functions. Coefficients of the function expansion are determined by introduction of auxiliary coefficients computed from recurrent formulas. A series of tests was carried out using algorithm B. The goal of the first test was to evaluate errors of all the coefficients. The second test dealt with an evaluation of the change of coefficients. The third test consisted of a comparison of the magnetic field during a quiet sun with that based on probable errors of coefficients. Functions of electric currents were computed using formulas of spherical expansion. The depth of the nonconducting layer of the earth and the conductivity of the earth's core were computed using approximate harmonics. Numerical values of these parameters differ markedly from results obtained by other investigators. Orig. art. has: 6 figures, 9 tables, and 22 formulas.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 008

Card 2/2

ACC NR: AT6034609 , SOURCE CODE: UR/3148/66/000/008/0031/0051

AUTHOR: Afraymovich, E. B.; Bazarzhapov, A. D.; Mishin, V. M.;  
Nemtsova, E. I.; Osipov, N. K.; Platonov, M. L.; Urbanovich, V. D.

ORG: none

TITLE: Mean  $S_q$ -fields according to data for September 1958

SOURCE: AN SSSR. Mezhdunarodnyy geofizicheskiy komitet. III  
razdel programmy MGO (Geomagnetizm i zemnyye toki). Sbornik statey,  
no. 8, 1966. Geomagnitnyye issledovaniya (Geomagnetic research), 31-51

TOPIC TAGS: geomagnetic FIELD , algorithm, spheric harmonic,  
geomagnetic coordinate, geographic coordinate, electroconductivity

ABSTRACT: The nature of the geomagnetic  $S_q$ -variations is unknown.  
Previous investigations made by the same authors are continued here  
using the same methods as before. A comparison was made between  
various groupings of stations and the systems of coordinates used for  
studying the magnetic variations during a quiet sun. The algorithm B  
used in earlier publications was insufficient for the solution of the  
problem of  $S_q$ -variations. The algorithm A was introduced which is  
analogous to that of Gauss and Shuster. The  $S_q$ -field was assumed to  
be equal to the magnetic field potential, and its components were

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ACC NR: AT6034609

expressed by sums of spherical harmonics from which the coefficients of expansion were determined. Computations of coefficients were made from various combinations of stations according to longitudinal zones and global distribution. Numerical values were given in tables. Analysis of variations of the amplitude  $c_1$  of the computed first harmonic of the  $S_q$ -field and those of the observed field showed that errors obtained using geographic and geomagnetic coordinates differed very little. Approximate values of  $S_q$ -variations obtained using spherical functions expressed by geomagnetic coordinates of southern and low-latitude stations were nearer the observed values. The same effect was obtained for stations of northern middle latitudes using spherical functions expressed by geographical coordinates. A combination of stations by longitudinal zones yields better agreement between computed and observed values of  $S_q$ -variations. Different  $S_q$ -field values in longitudinal zones indicate that the electrical conductivity of zones is different. Maps of current whirls are given for both hemispheres. Orig. art. has: 10 figures, 10 tables, and 11 formulas.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 006

Card 2/2

ACC NR: AT6034614

SOURCE CODE: UR/3148/66/000/008/0094/0101

AUTHOR: Mishin, V. M.; Troshichev, O. A.; Urbanovich, V. D.

ORG: none

TITLE: Distribution of magnetic activity at high latitudes

SOURCE: AN SSSR. Mezhdunarodnyy geofizicheskiy komitet. III razdel programmy MGQ (Geomagnetizm i zemnyye toki). Sbornik statey, no. 8, 1966. Geomagnitnyye issledovaniya (Geomagnetic research), 94-101

TOPIC TAGS: geomagnetic disturbance, magnetic activity, equivalent amplitude, local time component, universal time component

ABSTRACT: Magnetic disturbances change sharply and reach maxima in high latitudes. Initial data concerned with the equivalent amplitude and parameters of the local time component of the diurnal rate of magnetic activity have been taken from tables of earlier publications of the same authors. These data are taken from 23 stations of the Northern Hemisphere and 14 stations of the Southern Hemisphere. Magnetic activity was recorded during the IQY on quiet and disturbed days. The mean diurnal disturbances for each station were computed for local summer, winter, and the equinoxes. When the latitudinal distribution of the universal-time component is known, the mean value of the

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